

FORMULA MEDICINE

THEY HAVE BEEN CONSIDERED AS GUARDIAN ANGELS FOR RACING DRIVERS SINCE 1989, THAT'S THE YEAR WHEN DR. RICCARDO CECCARELLI FOUNDED FORMULA MEDICINE: VANGUARD MEDICS FOR PREPARING ATHLETES PHYSICALLY AND MENTALLY.



Formula Medicine founded in 1989 is a group of physical and mental trainers for motorsport, thanks to a doctor who has had the longest experience in F.1, Dr. Riccardo Ceccarelli. The idea stems from the awareness that studies on drivers' performance in the motoring world didn't exist, none had ever been carried out, and therefore a general culture on preparing for a psycho-physical test didn't exist.

A medical-scientific project was developed on this topic, one of this kind that has "torture and vivisection" several F1 racing drivers, they had to donate blood to Dr. Ceccarelli before the start of a GP and after it was over too, or they had to race covered with electrodes

and cables to register some parameters concerning body movement, which were later analysed and studied in detail.

This research then gradually involved more and more people, experts, Universities and Research Centres and in the end, they set up a group of staff made up of doctors, psychologists, athletic trainers, physiotherapists and nutritionists capable of giving any team complete assistance at 360 degrees and they were very meticulous in every aspect, medical, athletic and mental.

MENTAL ASPECTS: MENTAL ECONOMY TRAINING

Thanks to numerous scientific studies on F1 pilots, Dr. Ceccarelli and his team have set up instruments and methods developed especially for improving drivers' performance. These studies, however, aren't just for psycho-physical preparation, as a recent study has proved a driver's preparation during a race isn't directly proportional to just his athletic preparation, but it mainly depends on his mental yield. From some parameters registered on body movement during a race, and in particular by studying the kinetics of cardio frequency in fact, it was evident that even the best F1 champions are unable to carry out extreme racing throughout a whole race like they do in qualifying races. Usually heart beat in a race is about three tenths less compared to his maximum potential, and when drivers look to the extreme heart beat even increases by about 15-20 beats compared to heart beats measured during a normal race. Further studies show that increased

IN THE CURRICULUM THERE ARE 17 F1 TEAMS LIKE BMW, TOYOTA, RENAULT AND MERCEDES, AND OVER 75 PILOTS AMONG WHOM KUBICA, TRULLI, ALONSO, MASSA, ERICSSON AND VETTEL, PLUS AETHER 900 PILOTS FROM EACH CLASS / FROM 45 DIFFERENT COUNTRIES.



stress is nearly all due to the nervous system using up more energy. Therefore, increasing the heart beats is a component caused by waste of energy which is not necessary. This waste brings about precocious psycho-physical tiredness that prevents the driver from carrying out a complete race keeping up a maximum rhythm at all time.

In other words, the effort of attention and concentration required to drive a racing car

are not necessary for driving. Then they compare cerebral function and activation of 12 top drivers aged about 30 and 12 "non athletes" of the same age. Judging just their mental performance, there were no differences in terms of results between F1 drivers and "non drivers", but studying cerebral function in more detail you can see that a racing driver consumes less energy in each district. What is exceptional remains in the proof that the brain of racing drivers is

optimised, because it activates fewer cerebral areas and the ones that work are working at a much lower level: the muscles of "non drivers" aren't as abundantly and pointlessly contracted throughout the body, while racing drivers activate only the necessary muscles. Furthermore, it's very interesting to see that the "non pilots" carry

always at the limit, but without making any mistakes, often means having to have massive cerebral activity and a lot of contraction of muscles in the body, including those that

out tests with the support of hundreds of thoughts and reasoning, while drivers have a much simpler approach, "easier" and hence more natural.



Directly from these results, Formula Medicine has developed a "Mental Economy Training" program, a unique and innovative method aimed to improve the cerebral characteristics previously mentioned that make the difference for top drivers, using a series of instruments and techniques that allow evaluating cerebral performance objectively and at the same time quantifying the loss of neurological energy. With this work method you can train athletes and get improved mental performance using up less nervous energy and keeping up a good performance throughout the race as in qualifying.

Today, this training is carried out within an area of 130 square metres, which is the first example on a world wide scale of a gym for group training entirely dedicated to mental training, "Mental Economy Gym". Twenty people can train here at the same time competing between themselves with the aim of recreating the typical psycho-physical tension found when racing.

TRAINING PROGRAMS AT FORMULA MEDICINE:

Going on to the practical part, we can sum up saying how a week's training is covered at Formula Medicine:

From Monday to Friday you have two sessions daily of training, about 6-7 hours, equally divided between mind and body.

Each morning session and afternoon session, in fact, is divided into two distinct parts: the first half is dedicated to mental training and lasts about 90 minutes, and 90 minutes is usually dedicated to the next session for the athletic part. Only in case of aerobic exercise outside the session can last longer than three hours. It would be too complicated to explain the training for mental exercise, we'll just say what the main characteristics are; coordination and concentration, attention focalized on reaction time, ability to control thoughts, visual-spatial ability and visual-coordination ability and being able to control psychological anxiety and pressure. Also in this field training can be brief and "forced" or "endurance".

Instead, the physical component is equally



ATHLETIC PREPARATION

The 3 winning aspects of physical and conditional ability for a racing driver can be as follows:

Endurance: motor sport is an endurance sport discipline where heart beat is on average higher, therefore, constant training of this conditional ability is very important. During their stay in Formula Medicine they carry out at least one session a day of aerobics, usually sessions are held outside, and varying the interval of racing on bicycle on mixed tracks, or with a kayak on the lake, just to mention some. The athletes are monitored with cardio-frequency meters and assisted by athletic trainers so as to personalise and increase performance as much as possible.

Neck Training: due to lateral accelerations, race drivers must have strong and tonic musculature, and at the same time avoid overloading this part of the body that is quite fragile. In Formula Medicine there are 6 different methods for training that activate neck, shoulder, arm and forearm muscles, like when you are driving, at the same time. The wide choice of training methods allows you not only to get harmonic and functional training that prevents accidents, but also stops drivers from getting bored. In fact, the latter is one of the main reasons why drivers don't carry out training for their neck, even if it is one of the most important parts of training for a racing driver.

Neuromuscular Coordination: a racing driver must have strong and resistant muscles, but at the same time a great sense of coordination and sensitivity to optimize on the economy of an athletic action. Formula Medicine has set up different types of training on the track for recuperate in a short time, which allow the driver to exercise the strength of the muscular districts, general resistance, harmony and control of movement, concentration and reaction time all at the same time. Generally speaking, it's training that is the connection ring between purely physical components that are finalized to re-create psycho-physical stress and the situation of hard work that one has to go through when racing. Among the many instruments used there's the slackline for equilibrium, cables for suspension and boxing for reaction time and coordination.

subdivided in alternate sessions dedicated to resistance aerobics, at the circuits you have neuromuscular, at exercise for neck and at core-stability exercises.

Saturday morning is dedicated to finishing off sessions and/or downloading.

Saturday afternoon and Sunday is the long awaited relaxing "hour of fresh air" for the driver... time to relax ready to start again the morning after.

Food

Food is an important part of an ideal psycho-physical condition program for an athlete. It's important for every driver to be able to see to this for himself, but too often they only have approximate ideas that are quite muddled up too and deviate from very important rules. The first therefore, is to give the driver the priorities to prevent him from making silly mistakes, that is, he has to take in few concepts that are simple and easy to remember.

Well, what are these fundamental rules for healthy eating? It's not easy to answer this question because still today dieticians from all over the world argue and all have their own theory, and sometimes these are rather contrasting ones. Let's start thinking that food is our fuel, and therefore it has to be well dosed. We can divide it in 3 macro categories: carbohydrates (pasta, bread, rice, potatoes, fruit, vegetables, and sugars sweets), protein (meat and fish) and fats (butter and oil). Furthermore, there is food denominated that can be defined as "mixed", like milk, yoghurt and eggs, legumes and cheeses.

Over these last few years eating habits have changed, there is a greater intake of complex carbohydrates. The staff at Formula Medicine suggests that we should not exaggerate with complex carbohydrates, the ones that derive from cereals and reduce the simple ones until you actually eliminate them from the diet, but increase intake of carbohydrates

that derive from vegetables and fruit, which many of the younger generation simply overlook. What effect does the wrong diet have? A meal based mainly on complex carbohydrates increases of glycaemia, the value of glucose concentration in the blood; this brings about a high level of insulin, a hormone that has a protective function, circulating in the blood. However, insulin tends to reduce the level of glycaemia too much and this has a double consequence: hunger and tiredness. The latter derives from the fact that glucose is the only "fuel" for the brain. A wrong diet therefore makes you eat more and getting overweight and going through phases of sort of misty brain, two situations that are not suitable for racing drivers.

Here are three basic rules to avoid such situations:

- 1 - Avoid eating excessive amounts of cereals, potatoes and sweets
- 2 - Eat more fruit, vegetables, meat, fish and legumes.
- 3 - Eat small amounts frequently, at least 5 times a day breakfast, break, lunch, break and dinner

These are 3 easy rules to remember and to apply. Especially the third one is very important indeed for preventing the well-known hyperglycaemia, to get a light digestion and it is even more important on the track, when the dynamics of the tests, qualifiers and race have no interest for the stomach, leaving it very little time to digest.

The time required for digestion is another very interesting topic for drivers, and it can be summed up as if it were a "pyramid":

> 3 hour competition - "normal meal":
3 hours are enough for a correct



digestion, so you can eat a whole meal and stick to the above rules. For example, it could be an average portion of pasta, a portion of meat or fish, vegetables and if you like a bit of fruit.

< 3 / > 2 hour competition - "small meal":
we can still at a meal following the same rules, but a smaller portion, especially of pasta and meat/fish.

< 2 / > 1 ore competition - "snack area":
there's not enough time to digest a normal meal, so you should have a snack: ham and cheese toast, bar of energetic fruit, fruit, yoghurt and liquid malto-dextrin (a particular ready to use hydrocarbure). If you haven't got any, you can always use the same fruit just mentioned but in even smaller quantities, opting for fruit, bars and malto-dextrin.

